APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,354	02/17/2004	Volker Dicken	7390-X04-030	9221

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EXAMINER
HAJNIK, DANIEL F

ART UNIT	PAPER NUMBER
2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

		Application No.	Applicant(s)
Office Action Summary		10/781,354	DICKEN, VOLKER
		Examiner	Art Unit
		Daniel F. Hajnik	2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _17 January 2007_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-18_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-18_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _17 February 2004_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))..

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-3 and 6-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Gering (NPL Document "A System for Surgical Planning and Guidance using Image Fusion and

Interventional MR") in view of Gillick et al. (US Patent 5,530,455).

As per claim 1, Gering teaches the claimed:

1. A method volume visualization *(bottom of page 41, "Surface models of key anatomical*

structures can be visualized in the 3D view") comprising:

        providing of volumetric data, the volumetric data including a plurality of voxels defining

a body structure *(top of page 50, section 2.7.1, "Volume nodes describe data sets that can be*

thought of as stacks of 2D images that form a 3D volume" where the volume nodes can be

voxels, and on page 21 in figure 1-3 which shows a body structure and volumetric data);

the user selected distance measured from the surface of the body structure *(page 62, caption in*

figure 3-2, "Trajectory planning is performed by positioning points for entry (yellow) and target

(red), and examining the reformatted planes oriented relative to the connecting path" according

to the figure, the entry point can the starting point of a distance measured from the surface, the

surface of the top of the skull, where the distance would be the distance from the entry point to

the target point).

Determining of second voxels from the plurality of voxels of the volumetric data, wherein the

second voxels are spaced the user selected distance from the reference surface, the second voxels

belonging to the body structure *(pg. 41, in figure 2-10 the second voxels would be the volumetric*

data of the tumor shown and the bottom surface where it lays would be the reference surface,

further, this reference surface concept and distance is applied in on page 21, figure 1-3 where

the tumor data within the brain are second voxels determined from a reference surface

associated with the skull which would be part of the body structure, the distance in this figure is

indicated by the amount of voxels removed from the outer skull to shown the tumor);

Visualizing of the second voxels in a 2-dimensional image, wherein the 2-dimensional image is

located at the user selected distance from the surface of the body structure *(on page 45, in figure*

2-13, where the 3D view (which has second voxels) is shown on a LCD display monitor as

shown, where the LCD display monitor displays the second voxels as a 2-dimensional image,

also see output screen on page 21, in figure 1-3, where the rendered second voxels are display

on the monitor as a 2-dimensional image).

Gering does not explicitly teach the remaining claim limitation.

Gillick teaches the claimed:

Entering a user selected distance by means of user interface means comprising a wheel

mouse, an amount of rotation of the wheel of the wheel mouse being indicative of the user

selected distance *(col 2, lines 29-33, "to operate under the control of a mouse with a roller*

which implements scrolling. The turning of the roller, in conjunction with driver software,

generates scroll signals to Windows which mimics the action of the user clicking in the scroll

controls" where this scrolling control can be applied to the distance selecting of Gering).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine

Gering with Gillick in order to improve performance in programs by adding a mouse wheel

capability for scrolling functions (col 2, lines 21-24), for example, improved capabilities to scroll

to navigation a user interface.

As per claim 2, Gering teaches the claimed:

2. The method of claim 1, further comprising performing a segmentation of the volumetric data

to identify the first voxels *(top of page 20, "Volumetric data can be segmented semi-*

automatically using the 3Dslicer's collection of editing tools" where this segmentation can

include first voxels of the volumetric data).

As per claim 3, Gering teaches the claimed:

The method of claim 1, wherein the distance of each one of the second voxels from the reference

surface being determined along a direction of projection *(page 62, caption in figure 3-2,*

"Trajectory planning is performed by positioning points for entry (yellow) and target (red), and

examining the reformatted planes oriented relative to the connecting path" where the direction

of projection is a trajectory).

As per claim 6, Gering teaches the claimed:

6. The method of claim 1, whereby the volumetric data is medical image data *(page 21, in figure*

1-3, where a medical image data is shown).

As per claim 7, Gering teaches the claimed:

7. The method of claim 1, wherein the volumetric data being three dimensional microscopy data

(page 76, section 4.3.3, "The key in this application is that the lesion is benign, small, and

difficult to find ... The 3D Slicer can significantly reduce risk of damage by guiding the surgeon

more directly toward small lesions" where the small lesions can be microscopy data on the

volumetric display).

As per claim 8, the reasons and rationale for the rejection of claim 1 is incorporated herein.

Gering teaches the claimed:

A computer program product comprising a computer readable medium encoded with computer

executable instructions for volume visualization *(pg. 50, section 2.7.1, "Volume nodes describe*

where the images are stored on disk, how to render the data (window and level), and how to read

the files" where the disk is a computer readable medium and on page 45, in figure 2-13, where

the computer shown have to have computer executable instructions in order to operate properly).

As per claims 9-11, these claims are similar in scope to claims 2, 1, and 2, respectively, and thus are rejected under the same rationale.

As per claim 12, Gering teaches the claimed:

12. The computer system of claim 10, further comprising means for volume rendering of the second voxels *(pg. 50, section 2.7.1, "render the data" where on page 21, figure 1-3, the second voxels are rendered).*

As per claim 13, Gering teaches the claimed:

13. The method of claim 1, wherein the body structure is an organ or other pathological structure *(page 21, figure 1-3 caption, "Surface models of skin, tumor (green)").*

As per claims 14-17, these claims are similar in scope to claims 6, 13, 6, and 13, respectively, and thus are rejected under the same rationale.

As per claim 18, Gering teaches the claimed:

18. The method of claim 1 further comprising reformatting the volumetric data by moving the first voxels to a common row of a single slice and moving the plurality of voxels of the volumetric data such that a distance from each of the plurality of voxels to the reference surface remains the same *(pg. 42, figure 2-11, "Reformatted planes clip the surface model of the skin to reveal models beneath" and bottom of pg. 41, "Surface models of key anatomical structures can be visualized in the 3D view along with reformatted slices. Our surgical colleagues favor viewing skin as a landmark. Therefore, we allow for the slice plane to selectively clip away the*

skin model to reveal other unclipped models beneath" where the landmark acts a common row

of a single slice and the claimed moving is the selective clipping away of the skin model).

3.   Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gering in

view of Gillick in further view of Bitter et al. (US Pub 2005/0228250).

As per claims 4 and 5, Gering does not teach the claimed limitations.

Bitter teaches the claimed:

4. The method of claim 1, wherein the distance of each one of the second voxels from

the reference surface being determined by a minimum distance measure and

5. The method of claim 4, wherein the distance measure being an Euclidean distance *(paragraph*

[00122], "Pressing the button 91 activates the linear measurement mode (which calculates the

Euclidian distance between two points), and the mouse cursor changes shape" where this

Euclidean distance can be a minimum distance measure).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine

Gering, Gillick, and Bitter in order to display only the actual surface of the region of the interest

and avoid displaying unnecessary voxels by using minimum distance measures.

Response to Arguments

4.   Applicant's arguments with respect to the claims have been considered but are moot in

view of the new ground(s) of rejection.

Conclusion

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

    A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

    Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Daniel F. Hajnik whose telephone number is (571) 272-7642.

The examiner can normally be reached on Mon-Fri (8:30A-5:00P).

    If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ulka J. Chauhan can be reached on (571) 272-7782. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.
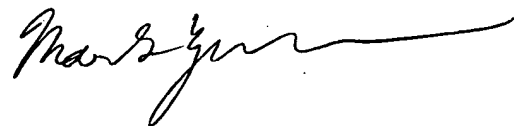
Information regarding the status of an application may be obtained from the Patent

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

D. H.   3/28/07

DFH

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